CONTROL DEVICE CONTROLLING CO2 RECOVERY DEVICE

FIELD

[0001] The present disclosure relates to a control device controlling a CO_2 recovery device.

BACKGROUND

[0002] In the past, technology for recovering CO_2 in exhaust gas has been proposed (for example, PTLs 1 to 3). For example, PTL 1 describes a vehicle-mounted type of CO_2 recovery device recovering CO_2 in the exhaust gas by introducing exhaust gas discharged from an internal combustion engine of a vehicle into a CO_2 recovery part. Due to such a configuration, the CO_2 recovery device described in PTL 1 reduces the amount of CO_2 discharged from the vehicle.

[0003] Such a CO_2 recovery device is operated using the electric power of a battery mounted in a vehicle for the purpose of optimizing the recovery capacity of CO_2 in the CO_2 recovery part. For example, in a CO_2 recovery device, electric power of the battery is used to cool the CO_2 recovery part.

CITATIONS LIST

Patent Literature

[0004] [PTL 1] Japanese Patent No. 4645447

[0005] [PTL 2] Japanese Unexamined Patent Publication No. 2005-327207

[0006] [PTL 3] Japanese Unexamined Patent Publication No. 2007-136341

SUMMARY

Technical Problem

[0007] However, in such a CO_2 recovery device, if the CO_2 recovery device is operated under conditions of a poor recovery efficiency of CO_2, sometimes a sufficient amount of recovery of CO_2 cannot be obtained with respect to the electric power of the battery consumed by the CO_2 recovery device.

[0008] In consideration of this problem, an object of the present disclosure is to provide a CO_2 recovery device with a large amount of recovery of CO_2 with respect to the electric power of the battery consumed by the CO_2 recovery device.

Solution to Problem

[0009] The gist of the present disclosure is as follows.

[0010] (1) A control device which is mounted in a vehicle including a battery and a CO_2 recovery device using electric power of the battery to recover CO_2 contained in inflowing gas, and which controls the CO_2 recovery device, wherein

[0011] the control device permits operation of the CO_2 recovery device in the case where a high efficiency recovery condition, at which it is predicted that the efficiency of recovery of CO_2, showing a ratio of the amount of recovery of CO_2 in the CO_2 recovery device with respect to the electric power consumed by the battery, will become equal to or greater than a preset predetermined efficiency, is satisfied, and prohibits operation of the CO_2 recovery device in the case where the high efficiency recovery condition is not satisfied.

[0012] (2) The control device according to above (1), wherein

[0013] the gas flowing into the CO_2 recovery device is a gas discharged from an internal combustion engine mounted in the vehicle,

[0014] the CO_2 recovery device includes:

[0015] a CO_2 recovery part recovering CO_2 in the gas flowing into the CO_2 recovery device;

[0016] a cooling part using the electric power of the battery to cool the CO_2 recovery part; and

[0017] a suction part using the electric power of the battery to suck in the gas and make the gas flow to the CO_2 recovery part, and

[0018] the control device permits operations of the cooling part and suction part if the high efficiency recovery condition is satisfied, and prohibits operations of the cooling part and suction part if the high efficiency recovery condition is not satisfied.

[0019] (3) The control device according to above (1) or (2), wherein

[0020] the control device:

[0021] permits the operation due to the high efficiency recovery condition being satisfied, if it is predicted that the vehicle will be driven by equal to or greater than a predetermined distance; and

[0022] prohibits the operation due to the high efficiency recovery condition not being satisfied, if it is predicted that the vehicle will not be driven by equal to or greater than a predetermined distance.

[0023] (4) The control device according to any one of above (1) to (3), wherein

[0024] the control device:

[0025] permits the operation due to the high efficiency recovery condition being satisfied, if a water temperature of the internal combustion engine of the vehicle is equal to or greater than a predetermined temperature; and

[0026] prohibits the operation due to the high efficiency recovery condition not being satisfied, if the water temperature is lower than the predetermined temperature.

[0027] (5) The control device according to any one of above (1) to (4), wherein

[0028] the control device:

[0029] permits the operation due to the high efficiency recovery condition being satisfied, if a predetermined time has elapsed from cold start of the internal combustion engine of the vehicle; and

[0030] prohibits the operation due to the high efficiency recovery condition not being satisfied, if the predetermined time has not elapsed from cold start.

[0031] (6) The control device according to above (1), wherein

[0032] the gas flowing into the CO_2 recovery device is air around the vehicle,

[0033] the CO_2 recovery device includes:

[0034] a CO_2 recovery part recovering CO_2 in the gas flowing into the CO_2 recovery device; and

[0035] a suction part using the electric power of the battery to suck in the gas and make the gas flow to the CO_2 recovery part, and